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PATENT APPLICATION
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LeA 33,565

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION OF)
HANS-DETLEF ARNTZ ET AL) GROUP ART UNIT: 1711
SERIAL NUMBER: 10/018,177) EXAMINER:
FILED: December 12, 2001) Rabon A. Sergent
TITLE: POLYUREA POLYURETHANES)
HAVING IMPROVED PHYSICAL)
PROPERTIES)

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Examiner's Answer dated August 26, 2004 has been received and its contents noted. The following is in response thereto.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an enveloped addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 10/26/2004

Date

Lyndanne M. Whalen, Reg. No. 29,457

Name of applicant, assignee or Registered Representative


Signature

October 26, 2004

Date

REMARKS

1. Appellants' Claims 12, 13 and 16 do satisfy the requirements of 35 U.S.C. § 112, first paragraph.

At page 3, lines 6-9 of his Answer, the Examiner has argued that there is no support for the claim limitation that the sum of the mole percents must equal 100%.

Appellants submit that one skilled in the art would readily appreciate that the sum of percentages calculated on the basis of total polyester polyol must total 100%.

Appellants' use of "comprising" language allows the inclusion of materials such as the polyisocyanate component (as claimed in Claim 13) in the polyester polyol component. Appellants' teachings with respect to preferred polyester polyol compositions in the specification and Examples illustrating the invention clearly support Appellants' position that Claims 12, 13 and 16 do satisfy the requirements of 35 U.S.C. §112, first paragraph.

2. Appellants' claimed invention requires polyether polyols satisfying specified criteria which are not taught or suggested by the Mao reference.

At page 4, lines 8-11 of his Answer, the Examiner has argued that Appellants' argument with respect to "specific polyester polyols" is without merit because the rejected claims do not require the specific polyester polyols argued.

Appellants have not argued that their claims require specific polyester polyols. Rather, Appellants have argued that their invention requires **polyether** polyols satisfying specific requirements. These specific requirements are specified in the claims.

Mao does not therefore disclose Appellants' invention as claimed in Claims 11, 15, 17-19 and 21 in the manner necessary to support a rejection under 35 U.S.C. §102(b).

3. Mao teaches a different type of thermoplastic polyurethane than that which is claimed by Appellants.

At page 4, lines 12-16 of his Answer, the Examiner argues that when the amount of chain extender required by Mao is taken into account, the isocyanate index of the reference polyurethanes is within the scope of Appellants' claimed invention and cites column 4, line 56 to support this position.

Appellants would point out, however, that use of the large amounts of chain extender taught by Mao (in the example cited by the Examiner, 5 times as much chain extender as polyol is used) is clearly not within the scope of their claimed invention as is apparent from the amount of chain extender used in Appellants' examples and the fact that there is no teaching in Appellants' specification which would lead one skilled in the art to use the unusually high amounts of chain extender required by Mao.

That the use of such large amounts of chain extender significantly affects the properties of the polyurethane product may be appreciated by comparing the properties reported by Mao for its products with the properties reported for Appellants' products. For example, the hardness of the Mao products is reported in terms of Shore D. The hardness of Appellants' products is reported in terms of Shore A - a completely different scale which is used for less hard materials. (The significance of this difference is discussed in the Mao reference at column 4, lines 18-37.) Similarly, the elongation values reported by Mao are lower than those reported for Appellants' products.

Mao does not therefore teach or suggest Appellants' claimed invention.

4. There is no factual basis in the Mao disclosure to support the rejection of Appellants' claims under 35 U.S.C. §103.

At page 5, lines 9-12 of his Answer, the Examiner argues that because production of polyurethane shoe soles and tubing was known at the time Appellants made their invention, it would be obvious to make shoe soles and tubing from the polyurethanes disclosed by Mao.

As is discussed in the Background of the Invention section of the present application, not all polyurethane compositions are suitable for making shoe soles

and tubing which are oil and petroleum resistant. Mao's silence with respect to oil and petroleum resistance of the disclosed polyurethanes can **not** be construed as a suggestion that the Mao polyurethanes would be oil and petroleum resistant in view of the hundreds of other known polyurethane compositions which do not have these properties.

The teachings of Mao do not therefore provide proper support for rejection of Appellants' Claims 14, 20 and 22 under 35 U.S.C. §103.

For these reasons and those discussed in their Brief, Appellants continue to maintain that each of the Examiner's rejections is in error and respectfully request that each of these rejections be reversed and that Claims 11-22 be allowed.

Respectfully submitted,

By 
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